

HOW A SKEPTIC MISREPRESENTS THE RESEARCH WITH STEPANEK

A REVIEW OF MARTIN GARDNER'S
HOW NOT TO TEST A PSYCHIC

BY JURGEN KEIL

The following is a brief review of Martin Gardner's book *How Not to Test a Psychic*¹ and a refutation of his explanation for the successful experiment that Pratt had selected as providing the best evidence for ESP from the research with Stepanek.

Martin Gardner calls himself a skeptic. Skepticism has an honorable tradition, one that suggests uncertainty particularly about one's own favored views. Gardner repeatedly pays lip service to this tradition. Nevertheless, readers of his book may be forgiven if they conclude that Gardner has a closed mind about the question of ESP and other paranormal phenomena. The whole purpose of his book is to misrepresent a period of careful research. Perhaps Gardner should be called a pseudoskeptic, but this is for the reader of his book to decide.

Gardner's book is littered with terms such as *ridiculous*, *laughable*, *preposterous*, and so on when he tries to denigrate the research that was carried out with Stepanek. Gardner complains that Ryzl did not mention the name of an assistant in one of his publications but has no qualms about his own reference to a perhaps imagined "unnamed parapsychologist who was always suspicious of Stepanek" (p. 101) nor about claiming success in preventing trickery by unnamed entertainers (p. 256). Gardner repeatedly refers to psi research not related to Stepanek, claiming that definite nonparanormal explanations have been found when in fact the questions remain open. For instance, in experiments with Ted Serios, overexposed white polaroid prints ("whities") cannot be readily explained except through equipment failure, and, under some conditions, this is also the case for "blackies." Yet such prints frequently occurred when Serios attempted psychic photography. Gardner did not mention either that Randi never took up Eisenbud's \$10,000 challenge to produce struc-

¹ New York: Prometheus Books, 1989, 264 pp.

tured prints under the same conditions under which Series succeeded. Gardner presents Honorton's observations of Felicia Parise (pp. 189, 245) as if we now have evidence that Parise used trickery. With permission from Honorton (personal communication) I quote from Honorton's letter of January 24, 1990.

I have never had any grounds for changing my opinion of Felicia Parise. I remain convinced that her phenomena were genuinely anomalous. I cannot eliminate the possibility of an explanation based on some kind of bioelectrical effect, but I am convinced that the phenomena were not produced through trickery of any kind. Nevertheless, as I stated in my PA presentation on Felicia's apparent macroPK (with qualifications beginning in the title of the paper), we were never able to observe the phenomena under adequately-controlled conditions, and so the case can only be regarded as suggestive.

With a fixed "mindset," to use one of Gardner's terms, that apparent ESP results must be due to trickery or errors, it makes sense to regard research as pointless if a subject does not succeed under conditions favored by the experimenter. If ESP as a possible explanation is taken seriously, then it makes a good deal of sense to continue with experimental conditions under which a subject can obtain significant results provided safeguards can gradually be improved to a point where alternative hypotheses can be rejected with a considerable degree of confidence. The close proximity between Stepanek and various targets has been regarded as a problem by all researchers who worked with him. In one of our papers (Keil & Pratt, 1969), we stated: "It must be admitted that the subject's significant performance has so far been limited to a fairly narrow range of conditions, and this fact has made the exclusion of possible sensory cues far more difficult than it would be in another test situation (for example, one where subject and targets are situated in separate rooms). An attempt will be made to describe the test conditions in sufficient detail to enable the reader to form his own judgment with respect to [this] hypothesis . . ." (p. 256). It is interesting that at the end of his book Gardner states: "There are in fact just two possible interpretations. Either Pavel Stepanek was a remarkable psychic, with all the powers that Ryzl and Pratt and others attributed to him, or he was a clever performer who deliberately boosted his scores by non-paranormal means" (p. 257).

It can be shown that Gardner's explanation of how Stepanek could have produced the results as a "clever performer" is based on the false presentation of data from publications that Gardner cites

as his sources. Beloff (1990) in his review of Gardner's book states: "In some respects this is an exemplary treatise" (p. 171). Beloff was impressed because Gardner apparently had consulted the relevant literature about Stepanek. I have some sympathy with Beloff's implied condemnations of critics who do not even bother to read relevant publications. In many ways such authors make it obvious, though, that their purpose is to debunk some research because of some rigidly held views or because they think it is the only way they can make a living. I find Gardner's pretense of detached, careful investigations much more reprehensible because his misrepresentations and use of false data will not be apparent to most readers.

Readers unfamiliar with research in which Stepanek participated over approximately ten years need to be briefed on how the experiments were conducted. Pratt in his monograph (1973) referred to two experimental reports that to him presented the best evidence for ESP because alternative hypotheses could be rejected with considerable confidence: the Blom-Pratt study (1968) and the Pratt-Keil-Stevenson study (1970). Out of 258 pages Gardner devoted 4 pages to the former study and 8 pages to the latter. As one of the authors of the three-experimenter study, I shall restrict myself to a discussion of this experimental report and to some other experiments that are related to it. My brief introduction to the experimental procedure is therefore limited to details that are relevant to experiments carried out in this relatively late period.

During these experiments Stepanek used a binary code (white and green) with which he responded to and identified (to a statistically significant degree) a set of, for instance, four flat targets concealed in a set of four flat containers. Stepanek could usually see the containers, and to a limited degree he was allowed to handle them. The targets were arranged (with the help of random number tables) such that for each presentation of a set of targets the order as well as the sides (that is, which of the flat sides was on top) were randomized.

When research was originally started, Stepanek was asked to call the colors of concealed cards that were white on one side and green on the other. The colored cards were concealed in opaque envelopes. Later the envelopes themselves were concealed in cardboard covers. They in turn were concealed in double-layered manilla cardboard jackets, and the jackets were eventually concealed in book-mailing bags, also known as "Jiffy" bags. Inside each cover target (usually concealed in a jacket) an envelope with a colored card inside was normally enclosed. But during most of these later experi-



Figure 1. Recent photograph of one of the original jackets of the kind which are partly open at the sides near the open end. With the camera at a somewhat different angle (compared to Gardner's Figure 2) it is obvious that the target could be touched. Stepanek moved the containers while they remained in a horizontal position (see Figure 3).

ments the content of each cover was no longer changed, and it is therefore appropriate to refer to such a package simply as a cover target. Similarly, a jacket target (usually concealed in a book-mailing bag) normally enclosed a cover with its content.

Covers and jackets were open at one end like a book-mailing bag, but for some experiments covers and jackets were not completely closed at the sides such that the openings consisted of flaps (see Figures 1 and 2). Containers were always presented to Stepanek with the opening pointing away from him. At this stage usually two and occasionally three experimenters worked with Stepanek in a double-blind configuration in such a way that none of the experimenters knew the target to which Stepanek responded. Most of the targets had been used as containers during earlier experiments.

In this discussion the term *container* refers to the visible device that was used to conceal a target, and during some experiments, jackets served as containers whereas during others book-mailing bags were used as containers. I pointed out earlier that the targets were randomized with respect to the order of presentation as well



Figure 2. Gardner's Figure 2, reprinted with permission of Prometheus Books.

as with respect to the top or bottom positions of the flat target sides. The same kind of randomization was also carried out when jackets were used as containers. When book-mailing bags served as containers, the order of presentation was randomized, but the mailing bags were always presented with the same side up.

Although Gardner points out that "it is ridiculously easy to identify the visible containers" (p. 128) this, at least for the later experiments, is quite irrelevant to the ESP question because even if Stepanek remembered, for example, the eight sides of four jackets or 20 top sides of 20 book-mailing bags well enough to recognize each one of them when they were presented to him again, this would not have helped him to identify the concealed targets. Gardner acknowledges now and then that the experimenters were well aware that

visual cues on the containers could be recognized by sensory means, but by using terms such as *ridiculously easy* he tries to persuade the reader that this is a serious experimental problem, which in fact it was not. Indeed, during the later experiments, the sensory cues that Stepanek associated with the visible containers may well have helped him in identifying by paranormal means some of these objects (which had previously been used as containers) when in further experiments they were concealed inside larger containers. From the experimenters' point of view, visible cues on the containers were a desirable aspect of the procedure.

Gardner suggests that the experimenters were completely unaware of the possibility that touch could be used to identify targets by sensory means. On page 203 he even quotes our list of alternative hypotheses including minute sensory cues (Keil & Pratt, 1969), and then goes on to say that we did not consider touch as a possibility. Apparently Gardner does not include tactile cues under sensory cues. In the three-experimenter report (Pratt, Keil, & Stevenson, 1970), it was pointed out that "Stepanek called each object either 'white' or 'green' as he lifted it from the stack and laid it aside, doing so by touching it only near the edges and without hesitation and without pressing, rubbing, or otherwise exploring the surface of the outside container" (p. 21), and on p. 24 "IS [Stevenson] had an excellent opportunity to watch the subject's handling of the jackets as he made the calls. He can add his testimony to that of the other observers that the subject held the jackets at the edges briefly and showed no evidence of attempting to palpate or otherwise study them with his tactile sense." At least during these later experiments Stepanek always moved the targets in such a way that they remained in a horizontal position, and Gardner's suggestion that Stepanek could have moved the flaps of the outside containers to peek at the targets simply does not apply. Figure 3 shows Stepanek moving a jacket container.

Gardner presents only one argument for how these later experiments might be explained by sensory means. Gardner argues that Stepanek could have identified the targets by surreptitiously poking his finger into the open end of each jacket or perhaps from the side between the flaps near the open end during those experiments when containers were partly open at the sides. Gardner argued that particular cover targets could have been identified by touch by noting small differences of the target edges or by marking some of these edges with a fingernail in the first place. Similarly, jacket targets could have been identified by poking a finger into the open

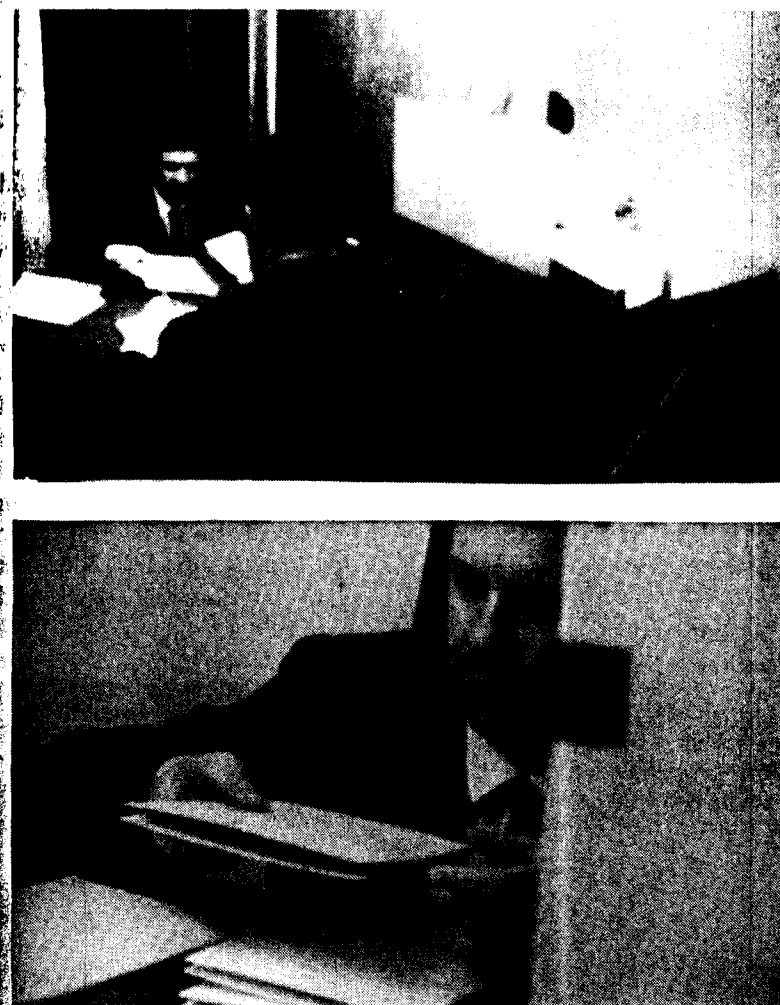


Figure 3. Two frames from a 16-mm film. The experimental procedures recorded on this film agreed with those carried out during experiments of this kind. The film was not taken during an actual experiment. On the first frame, Pavel Stepanek (visiting Charlottesville in 1968) is facing the camera and J. G. Pratt. Three containers (jackets) are stacked on the table near Stepanek's left shoulder. He has moved the first of the four containers to the right and is just about to put it down. The containers remained in a horizontal position. The second frame shows Stepanek moving the second container.

ends of book-mailing bags. In his text to Figure 7 (opposite p. 129), Gardner claims that the jacket targets concealed in the book-mailing bags came within a half inch of the opening of the mailing bags during the Series 23 experiments, that is, during one of the experiments published in the three-experimenter report that Pratt had listed as providing the best evidence for ESP (Pratt, 1973).

Gardner's statement is false. In the same publication we pointed out: "The size of the bags [book-mailing bags used as containers for the targets] is such that the ends of the jackets [the targets in this experiment] when they are inserted all the way into the bags by J. K. are several inches below the ends of the bags themselves" (p. 29). In another publication (Pratt & Keil, 1969) that is also cited by Gardner as one of his sources for his book, we even gave the measurements: "The book envelopes [standard No. 3 Jiffy bags] used were 14½ inches long, while the jackets were 10 inches long. When the jackets were inserted into the containers by J. K., he was careful to push each one all the way to the bottom of the envelope. When this was done, the two sides of the Jiffy bag at the open end came completely back together again. Thus there was a distance of at least 4 inches between the open end of the Jiffy bag and the upper end of the enclosed jacket" (p. 327). On page 328 we also stated, "We selected size No. 3 bags because they were just wide enough (inside width = 7¾ inches) to permit the jackets (outside width = 7 inches) to be inserted conveniently, but with a snug fit that allowed no sliding movement of the contents as the bags were handled in the testing procedure." For Series 23 Stepanek would have required very long fingers to touch the edges of the concealed jackets. (See Figures 4 and 5.)

At present I have only one U.S. No. 3 book-mailing bag of recent origin (Figure 4), which is almost ⅛ of an inch shorter than the 14½ inches quoted above. Nevertheless, when one of the original jackets is inserted, the distance between the top of the jacket and the opening of the bag is still 4 inches. In a recent catalogue called *Office Products 1990* (available in Charlottesville, VA) the length of the No. 3 mailing bag is listed as 14½ inches. When we referred to various book-mailing bags that were used in some unsuccessful series, we listed the Nos. 3, 4, and 6 bags as 8" x 14", 9" x 15", and 12" x 18" (Keil & Pratt, 1969). These measurements were given as rounded figures only. The No. 3 bags measured in 1968 were 14½ inches long and did not show any noticeable variations when they were stacked with others, but some may have varied slightly as the recent bag of approximately 14⅜ inches suggests. These small varia-

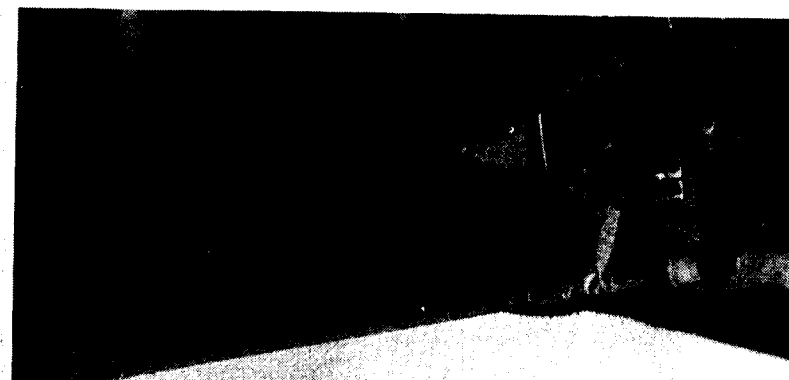


Figure 4. Recent photograph of a No. 3 book-mailing bag with one of the original jackets inserted. The finger "touch" position corresponds to Gardner's Figure 7.

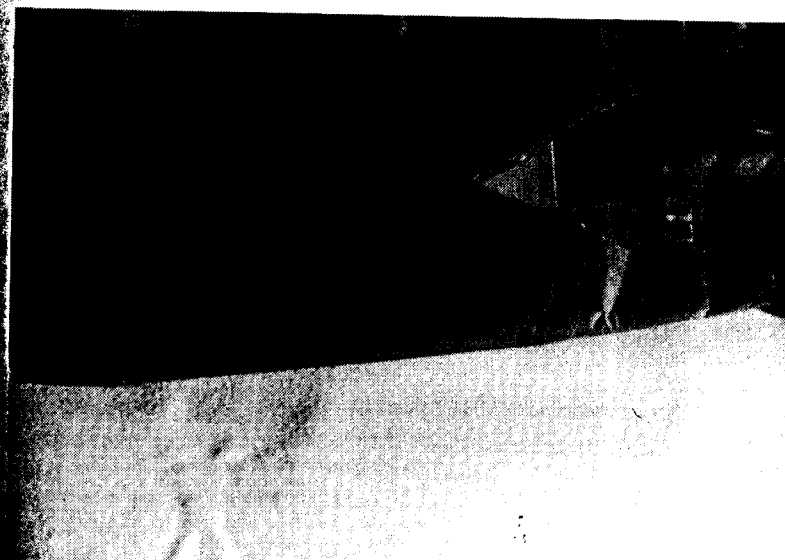


Figure 5. Even with a finger fully extended (compared to Figure 4 and Gardner's Figure 7) the target cannot be reached by touch.

tions, if they occurred at all, obviously have no bearing on the fact that Stepanek could not have touched the jacket targets with his finger (in the way suggested by Gardner) when they were inserted in No. 3 mailing bags.

Why did Gardner ignore the fact that the jackets were 4 inches below the opening of the containers? Why did he claim they came within half an inch of the opening? Perhaps wishful thinking and a closed mind set distorted his memory. Perhaps his skills in deception through conjuring tricks carried over into his publication. Gardner's book is similar to the performance of a conjurer; he puts considerable emphasis on irrelevant features of the experiments and spends an inordinate amount of time to point out possible weaknesses in experiments that were not regarded as particularly conclusive by the experimenters themselves. Perhaps he hoped that his false statements in connection with the experiment listed by Pratt as one of the two most important ones would not be noticed. I find it difficult to see how Gardner could believe his own explanation when he handled 14½-inch-long book-mailing bags. Stepanek picked each one up horizontally and put it to one side. To poke his finger into the open side, which was always pointing away from him, would have required such an uncommon position of his hand and arm that it would have been immediately obvious to the most casual observer. (See Figures 3, 6, and 8.) Indeed, the only way Gardner's picture (Figure 7) could be presented as a possible explanation (if the targets had been within half an inch of the opening as was falsely stated) would be by holding up the mailing bag vertically and by not showing its full length in the photograph.

Poking a finger into jackets (when covers were targets) would have been equally obvious. Gardner carefully avoided revealing this by producing a photograph (Figure 2) in which the jacket is held vertically and in which the camera is carefully lined up to conceal the fact that the flaps have been moved apart. Stepanek moved the jackets horizontally. (See Figures 3 & 9.) During Series 18 when jackets were used as containers, Stevenson was an additional experimenter who scrutinized the experimental procedure. Stepanek scored significantly during this series when Stevenson was present.

In his review, Beloff (1990) acknowledged that Stepanek could not have touched the jacket targets when they were concealed in book-mailing bags but suggested that this might not upset Gardner because he could argue that Stepanek was skillful enough to manipulate the book-mailing bags in such a way that the concealed targets (which came to about 4 inches of the opening of the mailing bags)



Figures 6 and 8. Recent photographs of a No. 3 book-mailing bag. These bags remained in a horizontal position when they were moved by Stepanek in a way similar to when the jackets were moved in Figure 3. The unsuccessful attempt to touch the target (unsuccessful because it cannot be reached) is obvious, not only because the position of the hand in front of the mailing bag (as viewed by Pratt and Stevenson) cannot be concealed but also because the long mailing bag has to be handled in an awkward and unusual manner. The latter is less obvious in a still photo.



Figure 7. Gardner's Figure 7, reprinted with permission of Prometheus Books.

would be moved within 1 or 2 inches of the opening. This suggestion cannot be reasonably accepted as even a remote possibility. The distribution of calls in Series 23 of the three-experimenter conditions shows that Stepanek had to recognize targets and had to make appropriate calls more than 30 and possibly 40 times to achieve the significant results that he obtained (Pratt, Keil, & Stevenson, 1970, p. 30). Stepanek responded significantly to only some of the eight target sides. To others his responses were in agreement with what would be expected by chance. The results from Series 23 indicate that Stepanek responded significantly to three sides and perhaps one further side but only by chance to the remaining four. Since the targets and mailing bags were randomized after each presentation of a set of four different targets (i.e., of eight sides), Stepanek



Figure 9. A recent photograph of one of the original jackets. The target is touched from the side. Even though this does not require the positioning of the hand in front of the container as in Figures 6 and 8, the deviation from normal handling (see Figure 3) is still obvious. During some successful series in which jackets were used as containers, the flaps were taped, that is, the possibility of touch from the sides was prevented.

would not only have had to poke his finger into 30 to 40 mailing bags but even into more to find those three or four marked target sides that he could recognize by touching their concealed edges with his finger. Furthermore, to conceal the initial manipulation (i.e., that he managed to position the targets within 1 or 2 inches of the opening of the mailing bag) from Pratt (who recorded the targets afterwards), Stepanek would have had to push the targets back into the mailing bags well beyond the reach of his finger.

A cinemagraphic film taken in Charlottesville in 1968 at the time when research reported in the Pratt-Keil-Stevenson study (1970) was carried out shows Stepanek's handling of four jacket containers that concealed four cover targets. The film included four sequences during which Stepanek made four calls (i.e., a total of 16) and moved four jackets (one at a time) in a horizontal position. Stepanek's handling of the book-mailing bags (with jacket targets)—not shown on the film—occurred in the same way as his handling of jackets.

The film was not taken during an actual experiment, but the experimental procedures were followed in every detail. The time sequences of the film correspond very closely to the time sequences of the experiments with jackets, as well as with book-mailing bag containers. When Stepanek made the 16 calls that are recorded on film, he handled each container for 2 seconds or less. The time interval (measured from the moment when Stepanek touched the first of the four containers until he put down the last one) was approximately $7\frac{1}{2}$ seconds for the four sequences recorded on film. To identify a jacket target concealed in a book-mailing bag by touching it with his finger, Stepanek would have had to move the jacket closer to the opening, put his finger into the opening, identify the target if it had been marked before, push the target back as far as possible, and move the container to one side in agreement with the experimental procedure. All this had to be done within 2 seconds or less.²

Anyone who tries to move just one jacket target within 1 or 2 inches of the opening of a No. 3 mailing bag will find that this is virtually impossible to achieve under the existing experimental conditions, and even one such attempt would be obvious to the most casual observer. As I have quoted previously, the jackets could be inserted into the book-mailing bags conveniently "but with a snug fit that allowed no sliding movement of the contents as the bags were handled in the testing procedure." To explain his results by this method, Stepanek would have had to manipulate the bags and make finger contacts about 60 to 100 times in 400 trials when a third experimenter was present as a special observer. This kind of suggestion does not make sense. I would agree with Beloff, though, that this may not upset Gardner because he does not seem to be interested in what actually happened during the experiments as long as he can present some kind of explanation—no matter how false and contrived—that accords with his mindset.

The authors of the three-experimenter studies and probably all other experimenters who had worked with Stepanek did face the question of whether Stepanek might intentionally (as well as unintentionally) use sensory cues to obtain significant results. We could not find a hypothesis that explained his results on a sensory basis, and Gardner could do it only by presenting false data.

Gardner has successfully entertained his readers with mathematical puzzles and other publications, and in some ways he must be a

² I am indebted to John Beloff for his suggestion to estimate the time span within which Stepanek would have had to carry out such manipulations.

reasonable man. The closest parallel I can see is in my memories of some Southern U.S. politicians whose speeches I heard for the first time in 1961/62. Some of these politicians were perfectly reasonable people when they spoke about various topics, but when racial questions were discussed, something strange seemed to happen and their otherwise normal intelligence seemed to be misdirected into small as well as obvious fallacies. Sometimes such behavior is referred to as an encapsulated neurosis, and instead of presenting evidence of why psi ought to be taken seriously by pseudoskeptics who have such symptoms, we perhaps ought to spend more time on recognizing such symptoms because without treatment reasonable communications will not occur.

Gardner referred to Schroeder and Ostrander's book as a pot-boiler. Gardner's book fits into the same category. Unfortunately, both books will be enthusiastically endorsed by all those who have a closed mindset. Published by Prometheus, Gardner's book is assured of a good sale; never mind that his main argument is based on the false presentation of data.

I would still recommend that various parapsychological groups obtain a copy of the book to compare Gardner's claim with my brief review and with the original publications. It is very likely that for many years to come pseudoskeptics will repeat Gardner's false claims that he has found a satisfactory nonparanormal explanation for Stepanek's results.

A brief note should be added about Pavel Stepanek. Gardner claims that Stepanek had material benefits from his involvement in this research. In a way this is true, but his benefits were quite modest and they were not of vital importance to his simple lifestyle. I believe Stepanek was motivated above all by a friendship that he felt for Gaither Pratt and to a lesser extent for others. Whatever the judgments of various readers may be, Stepanek cannot be put into the same basket as Uri Geller.

Stepanek refused to answer some questions that Gardner put to him in a letter, and Gardner presents Stepanek's refusal as an indication that he has something to hide. Stepanek had been deeply disappointed about promises that were not kept and about people whose behavior he regarded as selfish or immoral. In 1971 I wrote, "Stepanek is an extraordinarily sensitive man who treats any commitments between human beings with utmost seriousness. Some of his major disappointments seem to be associated with human relationships where others disregarded or misinterpreted his very definite expectations" (Keil, 1971, p. 80).

Those who know the details of some of his disappointments might themselves not be inclined to behave in the extremely cautious manner that is characteristic of Stepanek if they were to encounter similar circumstances, but I believe they understand Stepanek's behavior. I think it is very likely that if Stepanek had never participated in any ESP experiments and was asked questions about, for example, his previous work in the library, his reactions to such a letter might be quite similar.

Stepanek's mental and emotional responses can be regarded as extraordinarily sensitive. Although no conclusive statements can be made without detailed medical examinations—and such examinations would only provide indirect evidence after 20 years or so—there are indications that Stepanek's manipulative skills are quite limited. He suffers from webbed conditions of his hands. Surgical intervention during early childhood reduced but did not eliminate this problem. Even long after these operations Stepanek was excused from art lessons and other work that required manipulative skills throughout his school life. This is clearly indicated in his high school certificate.

In our personal relationships with public entertainers like Uri Geller, perhaps we should publicly adopt the view from the very beginning that they are determined to deceive us. Our experimental procedures in the work with Stepanek did not permit the kind of deception which Gardner imagined. Unless someone can suggest a reasonable deception hypothesis without making false claims about the experimental conditions under which Stepanek was successful, Stepanek, who never promoted himself and who never showed any signs of deliberate deception, ought to be treated with respect and gratitude for his long cooperation.

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To the Editor:

Permit me a brief reply to Keil's hatchet review (in the June, 1990, *Journal of Parapsychology*) of my book about Stepanek. I did indeed fail to notice that in one test, out of many, the jiffy bags were larger than I realized, making it impossible for Stepanek to touch the target with a fingertip. So far as I know, this is the only factual error in a book containing thousands of details. Keil plays up this mistake as though it is characteristic of the entire book. Actually, it concerns only a minor test, which is described so briefly that we know nothing about the conditions under which Keil administered it.

On page 157 Keil publishes a photograph taken from a film of Stepanek, not during an actual test, but only to record the procedure. (Why was only the procedure recorded, not the experiment?) If you study the picture you will see that the front edges of the jacket are slightly open, and Stepanek's right index finger could easily be inside the jacket. Naturally, he would not do this during the filming, but the photo is significant in showing that an inserted finger would not be visible to the experimenter during the actual test.

I found it enlightening to learn that Keil still thinks Ted Serios was a genuine psychic and that Honorton still believes Felicia moved that pill bottle by PK. Keil urges all parapsychologists to read my book. I hope that if they do they will judge it as a whole, and not fault it for one small inadvertent error about the length of a book bag!

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To the Editor:

Gardner's claim that "this is the only factual error in a book containing thousands of details" and "it concerns only a minor test which is described so briefly that we know nothing about the conditions under which Keil administered it" are false. In another test (Series 22) with jackets as targets and book mailing bags as containers, highly significant results for the jackets were obtained when Pratt and Keil conducted the experiment (1969, p. 322). This publication was cited by Gardner. Series 22 and Series 23 consisted of 400 trials each. As I had indicated in my review (Keil, 1990) of Gardner's book, Series 23 was conducted with a third experimenter. Series 23 had been selected by Pratt from all the research with Stepanek as providing the best evidence for psi. Pratt (1973) had selected two publications for this distinction, and the three-experimenter article (Pratt, Keil, & Stevenson, 1970) was one of them. This is what Gardner calls a "minor test."

The description of the test conditions which Gardner called brief included sufficient details in two publications (referred to above and also cited by Gardner) to show that the jackets could not be touched during the experiment when they were concealed in book mailing bags. In the three-experimenter test we had also referred to the position of the open ends of the containers "which were always away from" Stepanek. Yet Gardner presented photos of a book mailing bag and of a jacket in a vertical position without informing his readers that this was not the way in which they were presented during the experiments. Book mailing bags were never used in a vertical position during experiments, and jackets were probably never used in this way either. Without re-reading all the earlier experimental reports I cannot say this with certainty as far as the jackets are concerned. None of the experiments in which I participated involved containers with target material in a vertical position.

Gardner claims that Figure 3 in my review (1990, p. 157) shows that a finger touching the edge of a target would not be visible during an actual test. Stepanek handled the jackets by picking them up approximately at the middle of one side. If from this position he had tried to touch the target from the side (during tests when the flaps of the jackets were not closed) this would have been quite obvious as indicated in Figure 9 (p. 163). The black-and-white print of this photo may give the impression that perhaps two fingers were inserted between the flaps. In fact only the index finger is positioned between the flaps, as is clear from the original color photo.

If Stepanek had tried to touch the target from the open end, he would have had to hold the jacket in an unbalanced way which would also have been quite obvious. Figures 6 and 8 (p. 161) show this with a book mailing bag as an example. Gardner ignores that any such moves would have had to be carried out about 100 times in 400 trials and within a very short time interval in order to obtain the significant results which Stepanek achieved.

In his brief note Gardner provides us with two further examples of his misrepresentations. In my review I wrote, "Gardner repeatedly refers to psi research not related to Stepanek, claiming that definite nonparanormal explanations have been found when in fact the questions remain open" (p. 151). I did not express any views as to whether I think that Ted Serios is a genuine psychic or not. Gardner also claims that Keil "urges all parapsychologists to read my book." In fact I said, "I would still recommend that various parapsychological groups obtain a copy of the book to compare Gardner's claim with my brief review and with the original publications. It is very likely that for many years to come pseudoskeptics will repeat Gardner's false claims that he has found a satisfactory nonparanormal explanation for Stepanek's results" (p. 165).

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